EP 0 785 578 A3

(12)

## **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3: 22.04.1998 Bulletin 1998/17

(51) Int CL<sup>6</sup>: **H01L 51/20**, H01L 51/30, H01L 27/12

(11)

- (43) Date of publication A2: 23.07.1997 Bulletin 1997/30
- (21) Application number: 97300063.1
- (22) Date of filing: 07.01.1997
- (84) Designated Contracting States: **DE FR GB**
- (30) Priority: 16.01.1996 US 587426
- (71) Applicant: AT&T Corp.

  New York, NY 10013-2412 (US)
- (72) Inventors:
  - Baumbach, Joerg
     New Providence, New Jersey 07974 (US)

- Katz, Howard Edan
   Summit, New Jersey 07901 (US)
- Dodabalapur, Ananth
   Millington, New Jersey 07946 (US)
- (74) Representative:

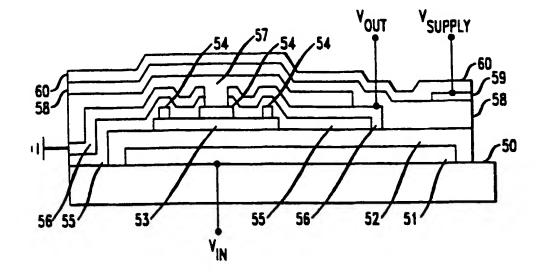
Watts, Christopher Malcolm Kelway, Dr. et al Lucent Technologies (UK) Ltd, 5 Mornington Road Woodford Green Essex, IG8 0TU (GB)

## (54) Circuit comprising complementary thin film transistors

(57) In preferred embodiments of the invention, the n-channel inorganic TFTs have an amorphous Si active layer (53), and the p-channel organic TFTs have  $\alpha$ -hexathienylene ( $\alpha$  - 6T) active layer (58). Complementary

inverters according to the invention are disclosed, as is an exemplary processing sequence that can be used to manufacture integrated complementary inverters and other complementary circuits according to the invention.

## FIG. 9





## **EUROPEAN SEARCH REPORT**

Application Number EP 97 30 0063

	Citation of document with indic		Relevant	CLASSIFICATION OF THE
Category	of relevant passage		to claim	APPLICATION (INLCL6)
P,X	DODABALAPUR A ET AL: organic/inorganic com APPLIED PHYSICS LETTE AIP, USA, vol. 68, no. 16, ISSE pages 2246-2248, XPOO * the whole document	plementary circuits"   RS, 15 APRIL 1996, 1 0003-6951, 2055715	1,2,4-6	H01L51/20 H01L51/30 H01L27/12
Ε	US 5 612 228 A (SHIE + column 2, line 3 - claims 1-18; figures	column 2, line 30;	1,2,4-6	
A	PATENT ABSTRACTS OF vol. 014, no. 016 (E & JP 01 259563 A (M CORP), 17 October 19 * abstract *	-872), 12 January 1989 ITSUBISHI ELECTRIC	1,2,4	
D,A	DODABALAPUR A ET AL: HETEROSTRUCTURE FIEL SCIENCE, vol. 269, 15 Septemb pages 1560-1562, XPO	D-EFFECT TRANSISTORS" er 1995,		TECHNICAL FIELDS SEARCHED (Int.CI.8) H01L
	The present search report has	peen drawn up for all claims		
	Place of search	Date of completion of the search		Examiner
	THE HAGUE	16 February 199	B K	önigstein, C
<u>₹</u>	CATEGORY OF CITED DOCUMENTS particularly relevant if taken alone particularly relevant if combined with anoi occument of the same category technological background non-written disclosure	L: document cited	Socument, but pate date d in the applica dor other reas	published on, or sion